

IN THE DRAWINGS:

The attached sheet of drawings includes changes to sheets 1-4 of the drawings. Specifically, a legend has been added for the figures illustrated on sheets 1-4.

Attachment: Replacement Sheets

REMARKS

This is intended as a full and complete response to the Office Action dated December 12, 2007, having a shortened statutory period for response set to expire on March 12, 2008. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 4-12, 14-20 and 22-24 are pending in the application. Claims 1, 4-12, 14-20 and 22-24 remain pending following entry of this response. Claims 1, 7, 10, 11, 15 and 18 have been amended. Applicant submits that the amendments do not introduce new matter.

Drawing Objections

The drawings are objected to because descriptive labels other than numerical are needed for figures 1-5. See 37 CFR 1.84(o). The Examiner has stated a proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

In accordance with 37 CFR 1.84(o), Applicant has amended the drawings to include descriptive legends. Therefore, Applicant submits that the objection has been obviated, and therefore respectfully requests withdrawal of the objections.

Claim Objection

Claims 10, 11, 12, and 23 are objected to because of the following informalities: Each of these claims depend directly or indirectly on cancelled claim 9. The examiner assumes these claims to be dependent on claim 7.

Applicant has amended claims 10 and 11 to depend from currently-pending claim 7. Therefore, claims 10, 11, 12 and 23 no longer depend (directly or indirectly) from a cancelled claim. Therefore, Applicant submits that amendments made to claims 10 and 11 obviate the objection, and therefore, respectfully requests withdrawal of the objection.

Claim Rejections - 35 U.S.C. § 112

Claims 1, 4-12, and 14-20 and 22-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Claims 1, 7, 15, and 18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for testing and repair of a memory device, does not reasonably provide enablement for the limitation " ... each bit line comprises one or more of the bit lines."

Dependent claims 4, 6, 8, 10-12, 14, 16-17, 19-20, and 22-25 inherit the 35 U.S.C. 112, first paragraph issues of the independent claim on which they directly or indirectly depend.

Claims 1, 4-12, 14-20 and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Dependent claims 4, 6, 8, 10-12, 14, 16-17, 19-20, and 22-25 inherit the 35 U.S.C. 112, second paragraph issues of the independent claim on which they directly or indirectly depend.

Claims 1, 7, 15 and 18 have been amended to recite "each bit line group comprises one or more of the bit lines." Thus, Applicant submits that claims 1, 7, 15, 18, and the claims that depend therefrom comply with 35 U.S.C. § 112, first and second paragraph. Therefore, Applicant respectfully requests the withdrawal of this rejection.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 7, 15, and 18, are rejected under 35 U.S.C. 102(b) as being anticipated by *Beffa et al.* (US Patent No. 6,145,092, hereinafter "*Beffa*").

Applicant respectfully traverses this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9

USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Beffa* does not disclose "each and every element as set forth in the claim". For example, regarding claim 1, *Beffa* does not disclose defect addresses that are stored in a memory unit which includes, for each plurality of word line groups, a first memory segment having a first number of defect address memory locations for storing defect addresses in the respective word line group and, for each of a plurality of bit line groups, a second memory segment having a second number of defect address memory locations for storing defect addresses in the respective bit line group, where each word line group comprises one or more of the word lines and each bit line group comprises one or more of the bit lines. Claims 7, 15, and 18 recite similar limitations. The Examiner argues that *Beffa* discloses this element at Col. 4, Lines 15-32 and Figures 6A-6B.

The cited portions are directed to self-test circuitry that repairs a row or a column if the number of cells on that row or column exceeds a threshold value. The operation of the self-test circuitry is disclosed in Col. 6, Lines 31-54, which is provided in full below:

Control circuitry 222 initiates a repair test cycle by clearing counters 216 and 218 (step 602). In steps 604 through 618, the testing circuitry sequentially accesses and determines if each memory cell in a row is defective. Specifically, column counter 216 is incremented (step 604) to generate the memory cell address to be accessed (step 606). Failure detection circuitry 224 then determines whether the accessed memory cell is defective (step 608), and if so, it increments counter 220 (step 612). The process is repeated until all the memory cells in a row have been accessed (step 610). When a row has been completed, the system determines if the row is a must-repair (step 614), and if so, circuitry 222 operates repair circuitry 223 to substitute a redundant row for the failed row (step 616) and to correspondingly reduce a count of the number of available redundant rows by one (step 617). Counter 220 is then cleared (step 618).

The testing circuitry repeats steps 604 through 618 for each row in the quadrant (steps 620 and 622). When all the row must-repairs have been tested, the system locates must-repairs in the column direction (process 630). Process 630 includes steps similar to that performed by steps 602 through 622, except that the role of the row and column counter are reversed. Although the process shown in FIGS. 6A and 6B is described as performing a complete must-repair test cycle by first indexing the memory array in row-major order and then in column-major order, this indexing order could be reversed.

Simply stated, *Beffa* discloses a self-test circuitry that systematically determines the number of defective cells on a row-by-row, column-by-column basis. Once all the cells of a row are tested for defects, the self-test circuitry determines if the number of defective cells exceeds a threshold. If so, the self-test circuitry repairs that row. Afterwards, the counter that tracks the number of defective cells for the row being tested is cleared, and the next row is tested using the same process as discussed above.

As such, nothing in the self-test circuitry disclosed in *Beffa* corresponds to a memory unit comprising a first memory segment having a first memory segment having a first number of defect address memory locations for storing defect addresses in the respective word line group and a second memory segment having a second number of defect address memory locations for storing defect addresses in the respective bit line group. In fact, the only components in *Beffa* that are used for storing are the row and column latches 206, 208, which are used to store the current address being tested, and the counter register 220, which simply stores the number of errors found in a row.

Therefore, Applicant submits that *Beffa* does not disclose each and every element as set forth in the claim. Accordingly, the withdrawal of the rejection to claims 1, 7, 15, 18 and the claims that depend therefrom is respectfully requested.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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